

Evaluation of CHIRPS Rainfall Estimates over Iran

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The Climate Hazards Group Infrared Precipitation with Station data (CHIRPS) dataset, first released in 2014, is a high-resolution blended rainfall product with quasi-global coverage that has not been previously evaluated over Iran. Here, we assess the performance of the CHIRPS rainfall estimates against ground-based rainfall observations across Iran over the time period from 2005 to 2014 inclusive. Results show that CHIRPS' performance is better over areas and during months of predominantly convective precipitation with highest correlations in the southern coastal lowlands characterized by heavy rains from convective origin. Correlations are stronger with variables such as altitude, particularly alongside coastal regions in the north and south, where surface water produces more moisture in the atmosphere. Results of pairwise comparison statistics and categorical skill scores reveal the influence of altitude and precipitation amount, while categorical skill metrics vary more with changes in precipitation amount than with latitudinal or longitudinal changes.

Keywords: CHIRPS, rainfall, statistical evaluation.